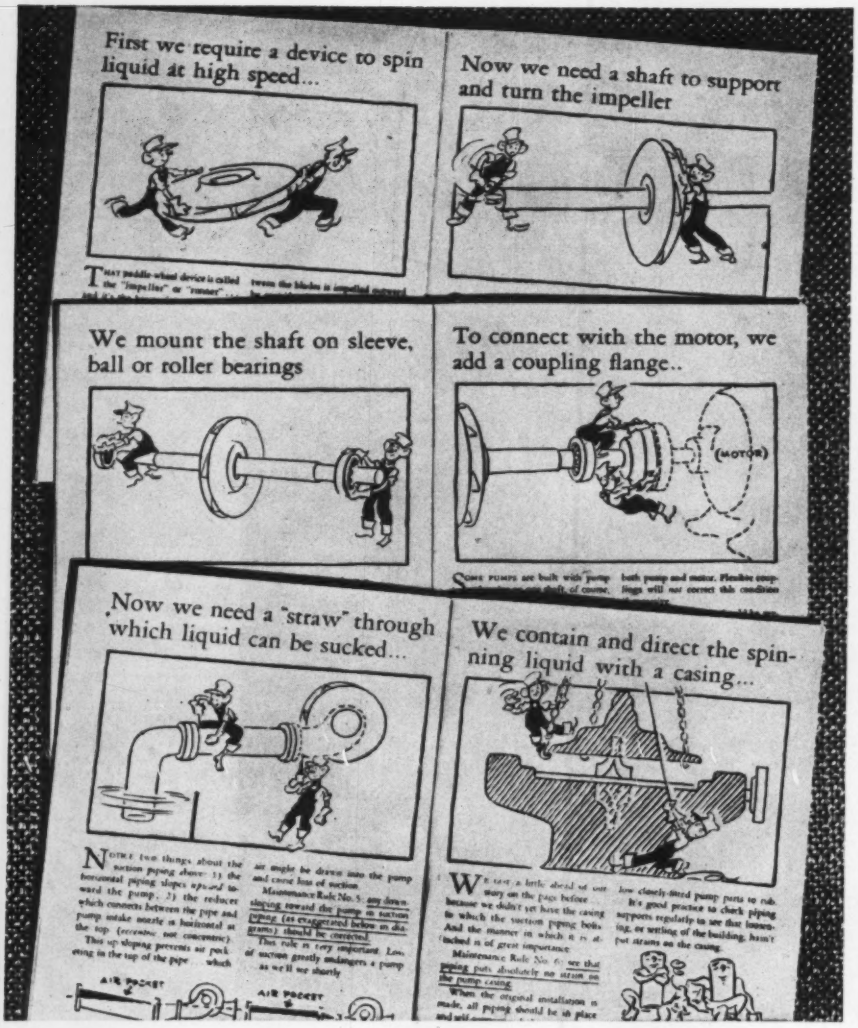
ENGINEERING NEWS-RECORD

Jap command post on Tarawa which proved a tough nut to crack

Let's Build a Pump!


First we require a device to spin liquid at high speed...
Now we need a shaft to support and turn the impeller
We mount the shaft on sleeve, ball or roller bearings
To connect with the motor, we add a coupling flange..
(MOTOR)
Now we need a "straw" through which liquid can be sucked...
We contain and direct the spinning liquid with a casing...
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A PUMP IS BUILT-STEP BY STEP-IN A-C'S NEW PUMP MAINTENANCE GUIDE. AS EACH NEW PART IS ADDED, WE SEE WHAT IT DOES, HOW IT DOES IT, HOW IT MUST BE CARED FOR.

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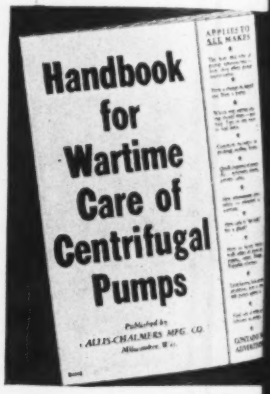

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The Week In Engineering and Construction

NGINEERING NEWS-RECORD • JANUARY 20, 1944 • VOLUME 132 • NUMBER 3

Interregional road work recommended by President

Proposal submitted to Congress to spend $750,000,000 a year to modernize or rebuild highways connecting all major centers of population

President Roosevelt, on January 12, t to Congress with his approval the port from the National Interregional ighway Committee recommending the signation of an interregional high- y system of 33,920 miles and propos- that $750,000,000 a year be spent the development of such a system a period of from 10 to 20 years fol- ing the war. The committee does t propose an entirely new interre- nal system of superhighways super- posed on the present system. The posed system, in large part, would a modernization of a considerable rt of the present federal-aid system, ther by reconstruction or relocation. The National Interregional Highway mmittee consists of Thomas H. Mac- nald, chief, Public Roads Adminis- ation; G. Donald Kennedy, former ad of the Michigan Highway Depart- nt; Bibb Graves, former governor of abama; C. H. Purcell, California di- ctor of public works; Frederic A. lano, former head of the National sources Planning Board; Harland tholomew, city planner, St. Louis; d Rexford G. Tugwell, former head the New York City Planning Com- ission.

The interregional system

The proposed interregional highway stem of 33,920 miles would be 1.04 rcent of the 3,267,717 miles of rural ads and urban streets in the United ates. It would connect directly all ies of 300,000 or more population d would reach 59 of the 62 cities be- een 100,000 and 300,000. In this re- ect it is superior to the 48,300-mile stem and the 78,800-mile system pre- usly investigated by the Public Roads ministration.

The larger cities not directly con- ted with the system are Akron, Can- , and Youngstown, Ohio.

Within the limits of its total extent, the committee states that the recommended interregional system conforms closely to the "strategic highway network" approved by the Secretary of War on May 15, 1941, in connection with national defense measures.

Included in the system are 2,123 miles within the municipal limits of cities of 10,000 or more population and 2,347 miles within the limits of cities of less than 10,000 population. It is anticipated that the final location will be outside of these latter cities in some instances.

Estimated expenditures

The committee recommends that the construction of this system be undertaken as a postwar project and that expenditures be made on it at the rate of about $750,000,000 a year. Costs would be divided about equally between the states and the federal government under the long established federal-aid system.

Expenditure of about $500,000,000 a year on the urban sections of the proposed system is recommended and $250,000,000 on the rural sections.

The committee points out that lack of rights-of-way is the principal obstacle to an early start on such work and urges that a simplified method acquiring right-of-way be authorized by Congress at an early date.

Engineer officer trains our invasion troops

Col. Paul W. Thompson, popular, 36-year-old Engineer officer, is revealed as the top invasion training officer for our troops in the British Isles. As commanding officer of the huge assault training center, built under his direction, he is daily putting both the Infantry and Engineer contingents, who will spearhead our landings on the continent, through grueling exercises.

Harris & Ewing photo

Col. Paul W. Thompson

Located on a beach that once belonged to a peaceful coastal resort, the training center includes every possible type of German fortification, and is the scene of constant combined assault operations involving Navy, Army and Air Force personnel. Live ammunition is used, and actual invasion conditions are reproduced to a degree never before attained in this war.

As early as last May, Colonel Thompson began conferences in London with officers from every branch of the service, British and French as well as American, who had had experience in combined operations or had knowledge of European coastlines and fortifications. Himself the Army's outstanding expert in assault techniques as practiced by our own and the enemy's combat Engineers, Colonel Thompson, armed with the results of these studies, laid out the training center and then supervised its construction. Now he is operating it, shouldering one of the biggest responsibilities in the European invasion plans.

Colonel Thompson is one of the best known young officers in the Corps of Engineers. A graduate of West Point in 1929, he also holds a B.S. degree in civil engineering from the University of Iowa, and a C.E. degree from Tulane University. Until 1935, he was in the Kansas City and Omaha district engineer offices, engaged on Missouri River flood control work, and then spent two years in Germany on a Freeman Hydraulics Scholarship. Returning from there, he became director of the U. S. Waterways Experiment Station located at Vicksburg.

His next assignment was as assistant military attache in Berlin, so that he was in Germany during most of the first year of the war, with a good opportunity to observe and study Hitler's military machine.

Colonel Thompson then continued these studies as an Engineer intelligence officer upon his return to the United States, and later became executive officer to Brig. Gen. C. L. Sturdevant, Assistant Chief of Engineers, in charge of troops. He left this duty to go overseas.

• • •

Restrictions not yet lifted on new construction

Chairman Donald M. Nelson of the War Production Board announced briefly on Jan. 12 that restrictions on new construction will be continued without modification until the probable future course of the war becomes clearer.

His short announcement came only eight days after Roy W. Johnson, director of the facilities bureau of WPB, in an address before the Priorities Association in Philadelphia (ENR. Jan. 13, p.15) outlined a number of possibilities for relaxing "moderately the restrictions on construction to utilize the slight excess materials now being produced over those required to win the war, . . ."

Mr. Nelson's announcement, however, said: "Construction has been sharply curtailed during the last year. The entire situation was given full consideration at today's board meeting, and it was unanimously agreed that there must be no modification of the restrictions until we can be certain, from the course of the war, that such modification would not harm the war production program."

Rivers and Harbors Committee wants authority for 240 postwar projects

Bill introduced into House Jan. 13 calls for at least 23 that would cost over $2 million each—Secretary of war would be asked to make survey for 200 additional projects.

The House Committee on Rivers and Harbors has sponsored a postwar rivers and harbors construction bill. It is H.R. 3861, introduced in the House Jan. 13 by the committee's chairman, J. J. Mansfield of Texas. If passed, this will be the first rivers and harbors omnibus bill to be enacted since 1938. Since that time, this branch of the Corps of Engineers has had a billion-dollar program shelved every year because of lack of congressional authorization and appropriation, it is understood.

Of the 240 projects for which authorization is sought, 23 would cost over $2,000,000 each, according to the Corps. The total estimated cost of the proposed program will not be available until the committee report is printed.

Unless recommended by a defense agency, none of the proposed projects would be appropriated for nor constructed until six months after the war. The committee presented the bill "in the interest of national security and the stabilization of employment." It is provided that proposed works "shall be prosecuted as speedily as may be consistent with budgetary requirements, under the direction of the Secretary of War and supervision of the Chief of Engineers."

The bill includes provisions not included in legislation passed in earlier years, in that it provides that penstocks or other similar facilities adapted to possible future use in the development of hydroelectric power shall be installed in any dam authorized when approved by the Secretary of War upon the recommendation of the Chief of Engineers and of the Federal Power Commission. The Chief of Engineers is authorized in his discretion to construct powerhouses and install power machinery for the development of hydroelectric power at any dam heretofore or hereafter authorized by any act of congress. It also provides for purchase of rights-of-way, adjustments with utilities, removal of towns from reservoir sites, and construction of foundations by the Chief of Engineers, in cases where the authorization for a project "is not sufficient to complete plans that may have been made."

In addition to the 240 projects for which authorization is asked, the bill also includes a list of over 200 for which the Secretary of War would be directed to make surveys.

• • •

Canol project proceeds on portions under way

The portions of the Canol project now under way, in the vicinity of Norman Wells, Yukon Territory, are going through to completion and will be in operation by the middle of March. Whether or not further expansion by the War Department will be made will depend upon the State Department's efforts at renegotiation with the Imperial Oil Co., Ltd., of Canada; and with the Canadian government for a contract more favorable to the United States.

This information was given *Engineering News-Record* by the War Department following release Jan. 9 by the Truman Committee of the report to Congress on an investigation of the project. Oil has been pumping since Dec. 18 and is now from 185 to 200 miles into the line. It is flowing smoothly, despite temperatures as low as 25 deg. below zero; and though there are minor leaks, there have been no breaks. The War Dept. expects to have stage one of the refinery complete before the end of January, and stage two in operation by the last of April. The Truman report indicated that operations would not begin until May.

The department expects that gasoline will be made at the Whitehorse refinery, stage one, by Jan. 28, and expects to be putting it into trucks operating on the Alcan Highway by the first of February. Before refining can begin, however, it is necessary to fill the storage tanks at Whitehorse. The department expects that high-test gasoline will be produced in stage two.

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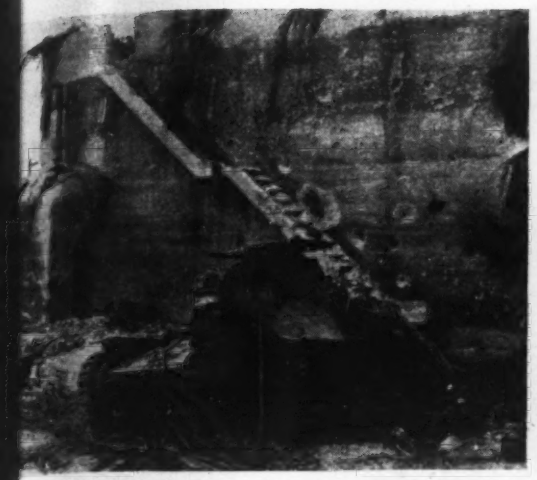


Official photos U. S. Marine Corps

Jap engineers build hard-to-take fortifications in South Pacific

When a communique says that our troops ...ed the Japs out of prepared positions", fortifications as these are often meant. ...Jap command post on Tarawa (left) is a ...idable structure of reinforced concrete. ...ing from the blast shield in front of the ...nce, the walls must be about 3 ft. thick. ... steps lead up to the roof, where protecting forces, armed with machine guns, grenades, etc., can be established behind 12-in. parapet walls. The post was finally captured with the aid of flame throwers.

The Jap dugout on Bougainville (right) is of a type that is almost impossible of detection from the air. Its crossed layers of palm logs covered with dirt would probably resist direct hits from small bombs. This type of construction has also been used in a more elaborate form, described as consisting of a concrete frame structure covered with a layer of logs, then 6 ft. of earth, then another layer of logs and 4 ft. more of earth. Some of the dugouts at Tarawa, which naval gunfire failed to destroy, were of this type.

...Michigan contractors ...need sales tax license

...n estimated 25,000 construction con...tors of all classes throughout Michi... must obtain and maintain a state ...s tax license starting Jan. 1. Para...ically, this results from a recent ...e Supreme Court ruling that such ...tractors are exempt from sales and ... taxes on materials installed in the ...ecution of their construction work. ...comes about from the fact that ...higan contractors will now be ...ed as retailers whereas they were ...erly considered consumers of the ...erial they used on construction, ac...ing to Walter F. Reddy, deputy ...nue commissioner. The contractors ...erly paid the sales tax when pur...ing materials from suppliers, but ...er the new practice, they will pay ...tax to the state and probably will ...ect it from their customers, he said.

New tax ruling

...s an aid in the clarification of this ... tax procedure, a memorandum ...wn as "Contractors' Rule 21" has ... issued recently by the Michigan ...e Department of Revenue. It de... contractors as "those persons regu... engaged in the business of con...cting, altering, repairing or improv... real estate for others." These con...tors are classed as the transferers ...ellers of all materials passing from their ownership to the party for whom the work is performed. Unless he furnishes materials and supply dealers his bona fide sales tax license number, no contractor, acting as a seller, may transfer or sell materials within the state without application of the sales tax.

According to the new rule, a contractor does not pass ownership of his machinery, equipment, power or fuel used in operating equipment, and the sales or use tax applies to his purchase of such materials. If equipment is rented from a lessor within the state, such lessor is the consumer and his seller is liable for sales or use tax on the purchase price of the equipment. However, if a contractor rents equipment from an outstate lessor then the contractor is liable for use taxes computed on his rental payments.

Reduced revenue

Despite the extra work involved in licensing Michigan's contractors, the State Revenue Department stands to lose about $450,000 of tax monies each year, since each licensee is entitled to exemption of a 3 percent tax on $50 worth of materials purchased and used in his work each month, according to Mr. Reddy. Michigan, incidentally, becomes the only one in 23 states levying sales tax that construes a contractor to be a retailer, he said.

The Supreme Court decision was in a case brought by the R. C. Mahon Co. of Detroit. One issue was whether sales tax should be collected on materials used in the construction of federal projects. The new ruling covers this point, said Reddy, since contractors, acting as retailers, can sell direct to exempt entities, such as federal and state governmental agencies and hospitals, schools or other educational agencies not operated for profit.

• • •

Department of Commerce sets wallboard standard

A voluntary standard of minimum specifications for one grade of homogeneous fiber wallboard has just been released by the National Bureau of Standards, U. S. Department of Commerce. It is the first time a standard has been established for this product. The standard prescribes requirements and tests for tensile and transverse strength, deflection, water absorption, and linear expansion, and lists the standard sizes in which the product is made.

It was proposed by the Insulation Board Institute, and was submitted to manufacturers, testing laboratories, and distributor and consumer organizations for their acceptance. Copies of the Standard, which is designated CS112-43, may be had from the Superintendent of Documents, Government Printing Office, Washington, D. C., at 5c. per copy.

L. A. engineers inspect site for huge dam

Potentialities of Bridge Canyon, in Arizona, as a site for the development of an additional 800,000 hp. in electric energy from the Colorado River were investigated recently by a group of top-ranking engineers from the Los Angeles Department of Water and Power.

Long under consideration by engineers of the U. S. Bureau of Reclamation and other agencies as a possible damsite, Bridge Canyon is located upstream from Boulder Dam, and is accessible only on horseback. Guided by Indians, the party spent ten hours getting in and out of the canyon. The point where the engineering party began its trip was 157 miles by Highway 66 from Boulder City, at Hindu Canyon, on the Hualapai Indian Reservation. The nearest town to the point where the party left the highway is Peach Springs, Ariz.

The possible damsite inspected by the party was the one considered as an alternate for Boulder Dam, prior to the development of that project, at a time when a plan for building a gravity flow aqueduct, in lieu of the one eventually adopted, was a subject of serious discussion. While engineering and economic advantages ultimately led to the construction of the present Boulder and Parker Dam projects, Bridge Canyon still is looked upon as an important power generating source.

Engineering reports have pointed out that with a dam rising 565 ft. above river level, a reservoir with a storage capacity of 2,300,000 acre ft. would be created.

Included in the group which visited the canyon were H. A. Van Norman, general manager and chief engineer of the department; E. A. Scattergood, advisory engineer; H. C. Gardett, consulting engineer; R. R. Robertson, chief electrical engineer and deputy general manager; W. S. Peterson, engineer of design and construction (power system); R. R. Proctor, field engineer; A. R. Arledge, executive staff engineer; Ralph C. Durke, assistant civil engineer, and C. Clarke Keely, member of the Board of Water and Power Commissioners.

How the 565 ft. high dam would appear in Bridge Canyon on the Colorado.

The Los Angeles party that visited the dam. Left to right: seated, E. A. Scattergood, C. Clarke Keely and H. A. Van Norman. Standing, R. C. Durke, A. R. Arledge, H. C. Gardett, Indian guide and R. R. Robertson.

• • •

Weaver is new head of Army utilities branch

Lt. Col. Stuart M. Weaver has been appointed chief of the Repairs and Utilities Branch of the Corps of Engineers, which is concerned primarily with the maintenance and operation of Army cantonments. He takes the place of Col. R. C. Kuldell, under whom he served as head of the management section of the R and U branch. Col. Kuldell has been made chief of the military construction division.

Col. Weaver, on military leave from his post as public works director in Montclair, N. J., recently was elected president of the American Public Works Association.

• • •

Freer cement movement now allowed by WPB

The War Production Board has reduced by nearly one-fourth the number of zones outside of which portland cement may be shipped only with WPB authorization. Zoning was originally put into effect to conserve transportation by curtailing excess and cross hauling.

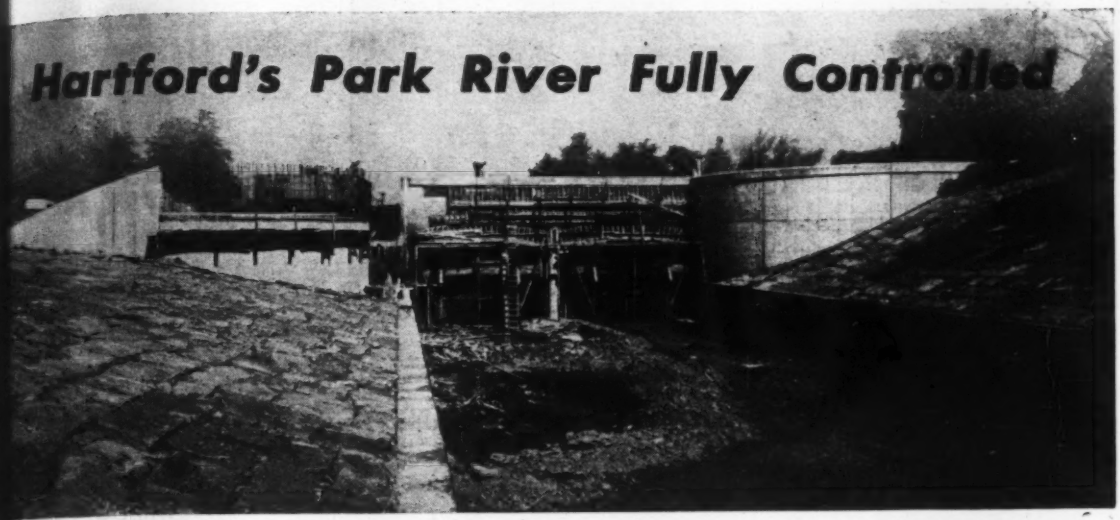
On the same date that WPB announced revision of its zoning practice, the Office of Price Administration announced that "with essential war construction rapidly approaching completion, the volume of cement required in the various areas can now be furnished by mills normally serving the areas," and therefore amended a previous order by removing the requirement that manufacturers making sales of cement out of their normal market areas be required to report such sales to OPA.

• • •

A "river of fire" damages bridge

Considerable damage to the Keating St. bridge of the Canadian National Ry. in Toronto, Ont., to a timber drydock and to construction equipment was caused by a fire Jan. 8 on the River Don, which flows through the city. The river is now frozen, thus concentrating oil seepage on the surface. It is thought that a spark from a passing locomotive caused this oil to ignite.

Hartford's Park River Fully Controlled



t structure of 5,730-ft. long pressure conduit is built high enough to take any expected flow of Park River, control water through downtown Hartford and force it into the Connecticut River even when it is at maximum flood stage.

Completion of the 5,730 ft. long pres- conduit to carry the Park River ough downtown Hartford, Conn. and vent flooding of important war in- tries has been announced by Lt. Col. gar W. Garbisch, Army District En- eer, who has had supervision of the 500,000 project. The conduit is a ble-barreled, 30-ft. wide by 19-ft. h structure, with a capacity of 9,500 at the highest recorded stages of Connecticut River into which it pties. The conduit replaces the un- htly and flood hazardous open chan- from which waters of the Park er or back water from the Connecti- often overflowed the town.

The intake structure is built up to a ght that will force the waters of the k River into the Connecticut at the imum stage of the latter.

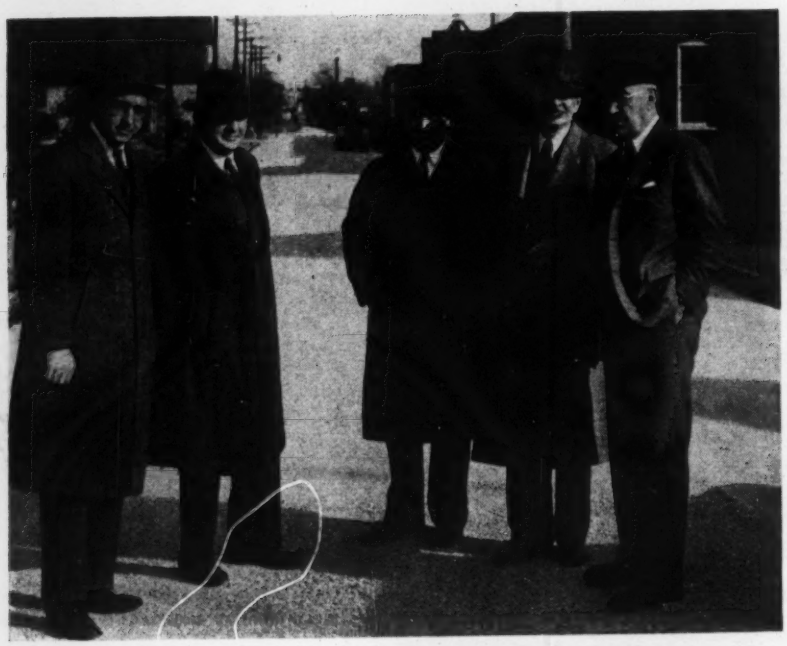
The top of the conduit is to be util- for a four-lane express highway to nect downtown Hartford with the erfront and the new Charter Oak dge, and express highways. As the duit is only a little below street de, crossings over the highway are low continuous girder bridges.

n construction of the conduit several ovations were developed (*ENR* Jan. 1942, p. 180). Traveling forms were d; concrete was mixed by a paver unted on a high crawler frame and vered directly to the hoppers of con- e pumps; distribution over the wide ch filled with forms and reinforcing l was done by hanging a pipeline concrete delivery under the boom a crawler crane and spreading the crete from swiveling chutes. Con- tor on the work was B. Perini & Son, of Framingham, Mass.

Open, unsightly and flood hazardous channel before pressure conduit was built.

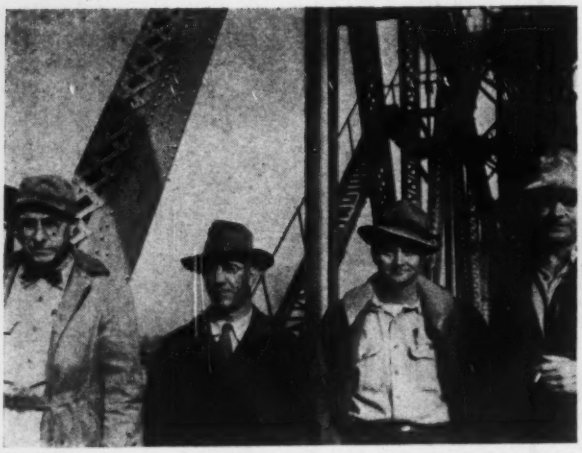
Following completion of the conduit a four-lane express highway is being constructed over it to connect downtown Hartford with the waterfront, the new Charter Oak Bridge, and express highways from the city.

MEN AT WORK



Mayor R. H. Tyndall of Indianapolis and party are shown inspecting a street newly improved with tar and crushed stone. The experiment has proved so successful that an extensive program is planned for 1944. Right to left in the photograph at left are: MAYOR TYNDALL, LUTHER, TEX., city street commisisoner, Wm. J. GRADY, Grady Bros. Construction Co., ARTHUR E. HENRY, City Engineer, and WM. F. NIXON, of Reilly Tar & Chemical Corporation.

CHARLES KANDEL, standing, of Craftsweld Equipment Corps., underwater cutting organization, accepts Army-Navy "E" for his firm. Seated are CAPT. EDWARD ELLSBERG, USNR; E. A. PRENTIS of Spencer, White and Prentis and COL. H. D. W. RILEY of the Corps of Engineers.



Key TVA engineers employed on raising the L & N Railroad bridge at Danville, Tenn., above pool level of Kentucky Dam are the four above. They are, left to right: G. M. HOYT, W. H. FARRAR, I. C. HILLIARD, and R. V. WELDON.

O. A. ZIMMERMAN, left, is project manager, and C. W. CUBBAGE is general superintendent on a Gulf Coast project of Doullet Ewin. LT. (J.G.) R. M. KEMPER (CEC) USNR represents the Navy Bureau of Yards & Docks on the work.

ctured left to right are: AL SIELKE, consulting engineer; BOB MAYO, Captain, Marine Corps Engineers; JIM FITZGERALD, Fitzgerald d Hudson; VIN SMITH, associate editor Construction Methods; ALF HJORT, chief engineer Geo. H. Flinn Corp., and AL PILLING of chmond Screw Anchor Co. Occasion was the annual business meeting of the Males, New York heavy construction organization.

Formerly assigned to dam construction, J. D. McLEOD, assistant civil engineer with the Tennessee Valley Authority, is now aiding in raising Eggners Ferry Bridge in Kentucky above pool level of Kentucky Dam.

Two busy engineers in the Little Rock, Ark., district of the U. S. Engineers are, left to right: JOHN T. DWYER, resident engineer on the Hot Springs airport, and CAPT. A. L. ANDERSON, assistant to the district engineer.

blueprint in hand S. E. DAVIS (left), general TVA foreman he N. C. & St. L. railroad under construction across the Ten- e River near Waverly, Tenn., and W. J. STARR, in general ge for TVA on this and other TVA projects, discuss foundation ils.

C. O. JOHNSON (left) was resident engineer; W. E. LOFGREN, assistant engineer of bridge design (center) was special consultant; and WM. J. HOWARD (right) held the contract for the recent conversion of Chicago's 10-lane Western Avenue fixed bridge into a lift structure, eliminating a serious bottleneck

Uniform rules for the sale of used construction equipment issued by OPA

Jan. 13 order correlates practices for the Army, Navy and Treasury Procurement in the sale of scrap metal as well as used equipment. Construction contractors can buy for their own use.

For the first time, uniform rules governing sale of used construction equipment and scrap metal by the Army, Navy and Treasury Procurement are now in effect by order of the Office of Price Administration, and these agencies are protected against suit for failure to observe ceiling prices in such sales.

Effective Jan. 13, the order correlates and formalizes practices—with some additions—of these agencies, which are "relieved of all liability provided in any price regulation or by the Emergency Price Control Act of 1942, as amended, in respect of sales of deliveries of used, waste and scrap materials (excepting scrap metals) to dealers in such materials purchasing for resale." This provision is understood to be the outcome of criticism of both the War Department and Treasury Procurement in the sale of various kinds of equipment said to have been resold at exorbitant prices.

For some time the War Department, at least, has shifted to the dealers the responsibility of observing ceiling prices in sale or resale of used equipment and scrap metal. When it was found, however, that ceiling prices were not always observed, provision was made that the dealer should certify to the salvage officer that the price at which he—the dealer—resold would not exceed the ceiling price. This applied not only to scrap metal, but also to used construction equipment in any state of repair.

Under Order No. 82, just released by OPA, this provision concerning resale of both used equipment and scrap metal is made to apply to sales made by the three agencies. In addition, it is stated that in the case of all used construction equipment — exclusive of scrap — there shall be the added requirement that dealers certify that the price they pay the government does not exceed the ceiling price.

Construction contractors can in the future, as formerly, purchase equipment for their own use. They will certify that they are purchasing at prices not in excess of the ceiling price.

Engineer posts offered by Public Health Service

Examinations for appointment as assistant sanitary engineer and passed assistant sanitary engineer in the regular commissioned corps of the United States Public Health Service are scheduled as follows: Jan. 31—New York, N. Y.; Feb. 9—Washington, D. C.; Feb. 17—Chicago, Ill.; Feb. 28—San Francisco, Calif.; Mar. 6—Denver, Colo.; Mar. 9—Kirwood, Mo.; Mar. 22—New Orleans, La.; Mar. 25—Atlanta, Ga.

Oral professional, academic, and physical examinations will be held at places and dates given above, and final written examinations will be given simultaneously at all places beginning on April 10, 1944.

The age of candidates for assistants must be between 23 and 32, and applicants for passed assistant must not be over 39 years of age.

Qualifications for assistants include at least 7 years of educational (exclusive of high school) and professional training, or experience equivalent thereto. Passed assistant applicants must have this prerequisite, in addition to 2 years post-graduate instruction, research or teaching in some specialized branch of sanitary engineering and at least 2 years practice in this specialty. In each case, it is required that the candidate shall have been graduated from a reputable professional school granting a degree in engineering (sanitary engineering course).

Compensation (including allowance for quarters and subsistence) for assistants is $3,411 with, and $2,975 without dependents; for passed assistant, $3,991 with, and $3,555 without dependents.

Applicants are requested to address the Surgeon General, U. S. Public Health Service, Washington, D. C., in their own handwriting requesting permission to appear before the board of examiners.

• • •

Final Rio Grande survey begun by U. S. Engineers

A final and detailed survey of the Rio Grande and its tributaries in New Mexico, for the purpose of providing the federal government with data to determine the economic advisability of building structures for flood control and irrigation in those regions, was started in December by Army Engineers.

The survey, which will require about eight months to complete, will be made along the Rio Grande from the border of Colorado to that of Texas. Actual spring runoff from Colorado will be studied while the survey is in progress, and preliminary plans for any structures which may be recommended as a result of the data collected will be made.

Starting of the survey is the latest step in a well advanced plan to have the federal government assume flood control of the middle Rio Grande in accordance with recommendations made two years ago by the Middle Rio Grande Conservancy District and the New Mexico congressional delegation.

The survey will be made by the staff of Lieut. Col. R. E. Cole, Albuquerque district engineer, excepting for some core drilling already under contract.

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Speakers are announced for the ARBA meeting

A postwar highway conference has been arranged for the 41st annual meeting of the American Road Builders Association to be held in Chicago, Feb. 1-3 at the Edgewater Beach Hotel. The topics for discusion will include war-time problems, availability of equipment after the war, and how to get a postwar highway plan into operation.

Among the speakers are J. W. Robinson, chairman, House Roads Committee; Col. Wm. N. Carey, chief engineer, Federal Works Agency; H. E. Hilts, deputy commisioner, Public Roads Administration; Samuel C. Hadden, chairman, Indiana State Highway Commission and president, American Association of State Highway Officials; Paul G. Hoffman, president of Studebaker Corp. and chairman of the Committee for Economic Development; Senator Joseph C. O'Mahoney of the Congresional Postwar Planning Committee; Carter Manasco, chairman of House Sub-Committee on Disposition of Surplus War Construction Equipment; Jesse P. Wolcott, member of House Roads Committee and of the Banking and Currency Committee; James J. Skelly, president A.R.B.A. Highway Contractors Division; Harold D. Smith, director of the U. S. Budget Bureau, responsible for directing federal postwar planning activities; Gov. Herbert O'Conor, Maryland, president of the Governors' Conference; R. G. LeTourneau, president, R. G. LeTourneau, Inc.; J. E. Lincoln, Lincoln Electric Co., Cleveland, Ohio; and Capt. Don S. Knowlton, U.S.N.R., commanding officer Medical Field Training School, Camp LeJeune.

Engineering projects at Houston, Tex.

The Houston, Tex., city engineering and right-of-way acquisition staff will have to have 48 employes added to it for 1944 at a cost of $190,995, according to Public Works Director John G. Turney. The extra personnel will be employed for from one to eight months. It will include 30 draftsmen, two chief design engineers, eight office engineers and eight design engineers.

The extra personnel is needed to draw up plans for construction of $3,600,000 worth of public works projects to be started at Houston in 1944. Included in these projects are 10 storm sewer jobs, costing over $950,000; a new $930,000 sewage treatment plant; four paving jobs, costing $450,000; two new sanitary sewer lines, totaling $385,000; and $1,000,000 worth of bridge work and flood control projects.

The extra personnel is also needed to obtain right-of-way for the new Houston-Galveston superhighway and right-of-way for other Houston projects.

Public Works Director John G. Turney has recommended the digging of ditches to drain some 25 sq.mi. in the southeast and northeast portions of the city at a cost of $171,000.

Defense housing builders at Houston have not yet received a promised allocation of lumber to complete their projects. However, the Navy has agreed to supply the lumber for 2,000 houses and negotiations are under way to get the Army and the Maritime Commission to supply the rest.

Brown Shipbuilding Company of Houston has completed preliminary dredging, piling, etc., and is now installing a new $1,000,000 dry dock. The dock will be used for repairing naval vessels of up to 3,000 tons.

Federal Works Administration Engineer E. L. Ferguson indicated on Jan. 3 that he would recommend approval of a large part of the $4,869,000 water improvement project at Houston, including a 20-inch collection line from proposed wells west of the city to the city line to handle 15 million gal. daily. Utilities Director J. M. Nagle says work may start by Feb. 15 and be completed by next summer.

The new Houston blast furnace of the Sheffield Steel Corp. will be ready on Industrial Road near Clinton Drive and completed, weather conditions favoring, about Feb. 1, H. O. McAnnish, assistant to the president announced. With this beginning of blast furnace operations, together with a rolling mill scheduled to go into operation at the same time, and blooming mills to start operations about Apr. 1, Sheffield Steel will be turning out finished steel products from East Texas iron ore. It will be the first complete steel mill in the Southwest. About 75 per cent local labor will be used.

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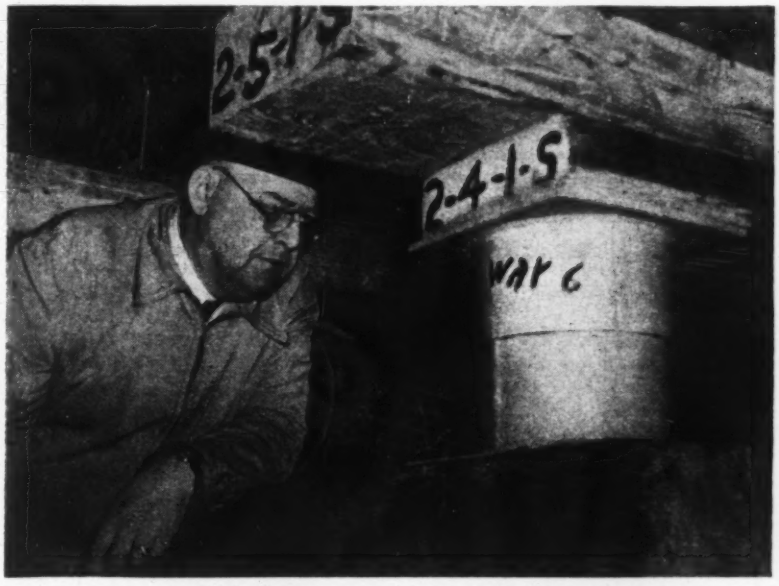
New standards proposed for masonry coordination

A proposed standard for coordination of masonry, which supplements the proposed standard for the coordination of dimensions of building material and equipment, is now available for professional study, according to the American Standards Association. Trade organizations and professional groups of the building industry are asked to study the proposal, which is expected to permit large savings in time and materials.

When referred to manufacturers producing structural clay and concrete masonry products, the proposed basis received wide approval. The manufacturers have agreed to make coordinated sizes of units available as soon as they can get material for new dies and manufacturing equipment.

Copies of the proposed standard (A62.2) may be obtained from M. W. Adams, Modular Service Association, 110 Arlington St., Boston 16, Mass.



Sand-jacks lower ship to launching cradle

The Houston (Tex.) Shipbuilding Corp., which is building Liberty ships on the Houston Ship Channel, has devised a means of using "sand-jacks" that eliminates the method of driving up wedges formerly used to transfer the load of the vessel to cradles just prior to launching. The new method, in use on all nine ways since October, saves 3,000 bd. ft. of lumber and 400 man-hours of time at each launching.

Steel sand boxes, about 24 x 12 in. by 6 in. deep, made in top and bottom halves are set under principal load points at the keels. Similar boxes of 8-in. and 9-in. dia. pipe are used under the bilge cribbing. Each steel box has a filling hole in the top and a drain hole equipped with a steel pipe plug in the bottom sections.

Before the keel is laid the bottom sections of the boxes are filled with sand that has been thoroughly dried by heating. Next the top sections are installed and these sections filled through the top hole. Finally, the pipe plug is inserted.

The day before launching, the grease bars are removed from between the ground ways and the slides, and the packing of the cradle is wedged up snugly but not sufficiently to take the weight of the ship, as the keel and bilge blocking and cribbing remain in place.

On launching day to lower the vessel to the launching cradle it is only necessary to remove the drain plugs and let the sand flow out. To launch the ship, the top blocking in the way of launching is removed, the dog shores are released and the sole plates forward are burned off, which releases the vessel. The entire operation costs $14.40. Launching requires about one half hour.

The setup was designed by Wm. S. Brustar, master shipwright of the Houston Shipbuilding Corp. He is shown above at one of the pipe sand-jacks used under the bilge cribbing.

WPB reduces number of items of used equipment that must be registered

But, effective Feb. 2, sale of registered construction equipment cannot be consummated without authorization by the board. Rules are given in amendments to order L-196.

The War Production Board has reduced by a large number the items of idle, used construction equipment which contractors must register with the WPB regional offices. At the same time, however, it added the new requirement that sale of those items, which still must be registrated, cannot be made without WPB authorization. This new regulation is effective Feb. 2. Exemptions from the sales restriction are—sale by a farmer, by a federal, state, county, municipal, or local government agency to another governmental agency, sale to a distributor, and sale for scrap.

Chief among the items for which registration is no longer required are:

Construction material batchers, jaw and roll crushers (portable type), crushing plants (portable type), blade ditchers, portable mounted rock-drilling machines, bituminous paving finishers, concrete paving finishers, blade and pull type earth-moving graders, agitator mixers (concrete truck type with or without elevating towers), concrete construction mixers (7 cu.ft. capacity and larger), concrete pavers, and tandem road rollers.

Used equipment for which registration is still required, and to sell which the owner now must get WPB authorization, is listed as follows:

Shovels, cranes, draglines, backhoes: crawler mounted, rubber tire mounted, or walking. (Manufactured after Jan. 1, 1930.)

Motor graders: self-propelled, earth-moving, rubber tired mounted, 16,000 pounds and heavier, tandem and four-wheel-drive types.

Tractors: crawler or track-laying type, all gauges, bare and including tractor mounted equipment such as bulldozers, angledozers, cranes, loaders, power control units, etc., (all diesel and semi-diesel powered models and specified gasoline powered models).

Equipment, now idle, which was bought before Jan. 18 must be registered by Feb. 17, that bought after Jan. 17 must be registered within seven days after purchase.

WPB forms to use

The changes in requirements are contained in amendment to L-196. Distributors and contractors owning such idle equipment will continue to use WPB Form-1159, in registering it at the nearest regional office. Those wanting to sell will make application on WPB Form-1319.

The list of 100 separate items which must be registered has been gradually decreased by amendment since the order first went into effect in the fall of 1942.

Borings to be made soon for Passaic River span

Calls for bids are expected soon on exploratory borings to determine the depth of bed rock on the site of a proposed large new bridge over the Passaic River between Newark and Harrison, N. J.

The new bridge will have six traffic lanes, each 12 ft. wide. With a center safety isle and sidewalks, the total width will be about 100 ft. The bridge is expected to cost $4 million and will carry from 30,000 to 50,000 vehicles daily. It will have a 35-foot under-clearance which will eliminate more than 50 percent of the present draw span openings that cause costly congestion of traffic.

State Highway Commissioner Spencer Miller, Jr., states that negotiations with the federal government indicate that priorities for materials in the bridge piers will be allowed. By the time these are in position, Mr. Miller hopes to be able to obtain steel and other materials to complete the bridge.

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Highway commission gets flood damages of $30,000

Damages of $30,000 were obtained by the Oregon State Highway Commission in an out-of-court settlement of a suit for $49,000 brought by the commission against the Southern Pacific railroad and the California-Oregon Power Co. as an aftermath to the flooding of The Dalles-California highway in Klamath county, near Algoma. The commission contended that a defective dike installed by the defendant companies was responsible for the flood damages.

Important transfers of U. S. Engineer officers

An announcement from the United States Engineer Office in Providence, R. I., Jan. 13, stated that, effective Jan. 14, Lt. Col. Edgar W. Garbisch, Providence District Engineer, will be succeeded by Lt. Col. Samuel G. Neff at the same time.

Lt. Col. Garbisch has been assigned as District Engineer for the New York Engineer District with headquarters in New York City. Since May 28, 1943, he has been in charge of all military construction for the Corps of Engineers in the Providence District, as well as supervising all other activities of the Army Engineers in that section.

Lt. Col. Neff goes to Providence from his post as assistant to the New England Division Engineer in Boston. His previous duties included the construction of a base in Newfoundland.

San Francisco will cede Treasure Island to Navy

The Public Utilities Commission of San Francisco, Calif., meeting in emergency session Jan. 3, advanced a proposed deal between San Francisco and the federal government by which, in effect, the city would trade Treasure Island for a post-war air base at the present site of the municipal airport.

The commission approved two resolutions under which San Francisco would waive title to Treasure Island, site of the Golden Gate International Exposition, a man-made tract in San Francisco Bay which the Navy wants to retain.

In exchange for this waiver the federal government proposed to spend around $8,500,000 for seaplane base construction and runway extensions at the municipal airport, and turn all of the wartime imrovements over to the city after the war.

E. W. Roemer to direct Massachusetts A.G.C.

The Associated General Contractors of Massachusetts has announced the appointment of Edward W. Roemer as executive director. Mr. Roemer has been prominently identified with the construction industry in New England for many years. He served for 14 years as deputy building commissioner of Boston, 8 years as commissioner, and 3 years as New England manager for James Stewart & Co. of New York. He was head of the N. E. Building Officials' Conference for 5 years.

Mr. Roemer is a member of the American Society of Civil Engineers and its representative on the central committee of lumber standards sponsored by the Bureau of Standards, and he is also a member of the building code coordinating committee of the American Standards Association.

Construction Communiques

Engineering news from the battlefronts

Midway—Reference to the successful use of coral sand and sea water with Portland cement in making concrete for gun emplacements, shelters and numerous other structures on Midway Island was made by Lt. Comdr. W. L. Dickey, (CEC) USNR, in a recent talk in San Francisco before members of the Structural Engineers Association of Northern California.

Commander Dickey said that the shelters, over which bulldozers piled sand, later withstood direct hits by 200-lb. bombs.

In describing construction on Midway, Commander Dickey stressed the difference in tempo and policy before and after the Pearl Harbor attack. Many expedients for improving protective measures were developed in a rush after the first Japanese attack, he said.

South Pacific—When a battalion of the Navy's base-building Bees found a runway was too short, they added land to the island to extend the strip, according to Comdr. Chester J. Mattson, officer in command of the 50th CB, who recently returned.

He said preparations to knock the Japanese off the globe are staggering, and added:

"At our base alone, where we are building harbor facilities, barracks, wharves and airstrips, millions of feet of lumber continue to arrive on Navy ships, and receipt of thousand of bags of cement each month is just routine."

Seabee Training Details—Rear Admiral Lewis B. Combs, Asst. Chief of the Bureau of Yards and Docks, recently brought the facts about Seabee training up to date.

Seabee training centers at Camp Peary, Williamsburg, Va., Camp Endicott, Davisville, R. I., and Camp Lee-Stephenson, Quoddy Village, Me., are processing upwards of 60,000 men at a time.

Marine combat tactics are taught by Marine instructors. Training periods average four weeks of primary military training, four weeks of advanced technical training, plus an indefinite period of additional military and technical training at an advanced base depot.

Authorized strength of the Seabees is now 245,000 officers and men, formed into 197 regular construction battalions and 25 special battalions, which are supplemented by construction base maintenance units, special detachments, and demolition units.

The regular construction battalions are organized so that they are completely self-sufficient in carrying on any construction task, and, if need be, are capable of defending themselves. Each standard battalion unit consists of four construction companies and a headquarters company—1,079 men and 32 officers, including 26 of the Civil Engineering Corps, two medical officers, one dentist, two supply and disbursing officers, and one chaplain.

The special battalions have been trained intensively. Their vitally important task is to unload and load ships at outlying bases.

A construction battalion maintenance unit, comprised of 5 officers and 270 men, takes over the operation of a base already constructed by the Seabees, thus releasing a full battalion for further new construction.

To perform specialized functions which may range from emergency repair of transports to unloading heavy guns and ammunitions from "first wave" invasion craft, smaller Seabee units, known as detachments, are organized.

The third special type is the combat demolition unit. These men have the dangerous assignment of demolishing enemy obstructions blocking our amphibious operations.

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Colorado River water for central Arizona

Preliminary studies of projects to bring Colorado River water into central Arizona should be ready for examination in about two months, it was said by E. B. Debler, chief of the project planning division of the U. S. Bureau of Reclamation, during a recent visit to Phoenix, Ariz.

Mr. Debler, in company with E. A. Moritz of Boulder City, Nev., recently appointed head of the Lower Colorado River basin division of the bureau, and Harry G. Rashbacher, who is in charge of Arizona project planning, met to discuss Arizona's financial cooperation in project planning.

U. S. Navy photo

Oil drum radiator results from Seabee ingenuity

Front-line experiences have demonstrated that the most useful piece of war scrap is the empty oil drum, and the most useful construction machine the crawler tractor. At Munda, in the South Pacific, versatile Seabees made the two work together, as shown in the above view. Smashed by the Japs, the tractor was repaired by spare parts from other machines, but an extra radiator was lacking. An oil drum was made to serve as the missing part. Just how the circulation system works is apparently a Seabee secret, for no information on this point was given, but apparently it does work.

News of the engineering schools

Several professors have been granted leaves of absence from the faculty of engineering at the University of Wisconsin for the 1943-44 school year, all of them serving either with the United States government or in the country's armed forces.

Those who are on leave include: W. S. Cottingham, associate professor of civil engineering, on leave for first semester only; Lewis H. Kessler, associate professor of civil engineering, and Lloyd F. Rader, professor of civil engineering. All are serving in some capacity with the government, except Prof. Rader, who is a lieutenant commander with the Navy.

The legislature of Florida has appropriated $50,000 to finance research work by the industrial research and engineering station at the University of Florida. Professional engineers of Florida have had much to do with the development of the research station, and also in getting the money to finance its work. They believe there are great possibilities in the development of materials available in Florida which are not now used, and in finding new uses for materials now being processed.

New instructors at the Ecole Polytechnique, Montreal, Que., include: Marcel Manseau, assistant to the professor in engineering drawing; Yvon de Guise, lecturer in hydrology and hydraulic structures; and Attilio Monti, assistant in the strength-of-materials laboratory.

Launching of an extensively financed research program to test properties of laminated plastics with a view toward their more intensive use in war and postwar industry is announced by Ralph K. Witt, associate in engineering of the Johns Hopkins University, who will direct the experiments. The tests are being financed by eleven of the major suppliers of laminated plastics.

Political control of technology, "the vital force in human progress," looms as a danger of the postwar period, Prof. James Kip Finch declared in his recent annual report as acting dean of the Columbia University school of engineering. "The government has largely taken over the field of civil engineering, and is now invading industrial fields, said Prof. Finch, deploring efforts to regulate and regiment discovery, research, and invention.

"The government in the last decade has been continually taking over activities in the civil engineering field," Prof. Finch asserted. "Even in the predepression years about one-third of the professional civil engineers were practicing as government employees. The various public works agencies of the prewar decade increased this ratio to well over 50 percent. Various recent state and municipal laws have attempted to make it, or actually have made it, impossible in some areas for the independent consulting engineer to serve in public undertakings."

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F. C. Carstarphen dies, aerial tramway expert

Frederick Charles Carstarphen, 62, consulting engineer, died at Denver, Colo., Jan. 8. Mr. Carstarphen was recognized as a leader in engineering in the West. He was considered an expert in tunnel construction, but his foremost interest was in aerial tramway design. From 1913 to 1923 he was chief aerial tramway engineer of the American Steel & Wire Co. of Trenton, N. J. At the time of his death he was working on a special project for the War Department.

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Surplus Army materials for school construction

Surplus Army materials from Camp Joyce Kilmer, N. J., and an Army warehouse at Saratoga Springs, N. Y., will be used in the construction of an elementary school in heavily industrialized Bethlehem, Pa. Work will start this week, Regional Director John M. Gallagher of the Federal Works Agency has announced.

This is the first time since the spring of 1942 when the stringent priority criteria on materials essential to the direct war program have been relaxed for a war public works project in the FWA region embracing New England, New York, New Jersey and Pennsylvania. The materials include plumbing, heating and electrical supplies, fittings and nails.

The FWA program for war public works construction in war production communities was drastically restricted 18 months ago, when the War Production Board set up new critical lists covering materials required for ships, planes, tanks and munitions. Many of these community projects were rescinded or revised to eliminate use of critical materials, or earlier plans and specifications were placed on a postwar shelf.

The contract for general construction of the school building was awarded to Gottlieb Schneider, Bethlehem and Allentown contractor, on a base bid of $48,929. The building will be of masonry walls with fireproof corridor construction and will provide six classrooms.

Population increases in the area attributable to the war industrial effort overtaxed existing school facilities and an FWA full-cost grant in Lanham Act funds was approved for the Bethlehem project.

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Rock crusher monopoly charged by F.T.C.

On Jan. 11, the principal manufacturers of rock crushing equipment, two trade associations, and a large number of equipment distributors were charged by the Federal Trade Commission with conspiracy to suppress competition.

Upon the issuance of the order of the Federal Trade Commission, Rufus G. Poole, attorney for the Associated Equipment Distributors, stated that the order had not been opposed by his clients as it did not interfere with their normal methods of doing business or disturb their existing relationships with manufacturers.

"The acts complained of by the commission as suppressing competition," said Mr. Poole, "occurred in 1939 and 1940, and have not been repeated since then. They were the outgrowth of the efforts of the government during the NRA program to stabilize prices and bring about closer cooperation between manufacturers and dealers. I do not believe that they ever had the effect of actually increasing prices or restraining trade."

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Impounding reservoir proposed for Asheville

At the recommendation of City Manager Pat M. Burdette, the Asheville, N. C., city council is considering the preparation of plans for the construction of an impounding reservoir for its water system.

In 1938, Albert S. Crane, consulting engineer of New York, made a survey of the city's future water needs and recommended that an impounding reservoir to cost $2,500,000 be constructed on North Fork Creek. Since that time the city's water needs have increased greatly, and during the past fall a protracted drought brought the reservoir to a low level. The present reservoir serving the city holds only a 90-day supply.

BRIEF NEWS

The construction of a $3,000,000 airport near Charleston, W. Va., is being planned, a recent election in Kanawha County having approved the proposed bond issue by a vote of 10,868 to 502.

The Federation of Architects, Engineers, Chemists and Technicians last month announced the affiliation with it of the Association of Technical Employees, the only Canadian national union of technical and professional employees. The Association of Technical Employees, which had branches in Montreal, Que., in Toronto, Hamilton and Windsor, Ont., will be established as an autonomous Canadian division of F.E.C.T.

Award of two more contracts for additional irrigation canal construction to increase production of war food on the Yakima Division of the Bureau of Reclamation's Yakima project in eastern Washington, was announced recently by Secretary of the Interior Harold L. Ickes. The contracts, together with others previously awarded, which total more than a million dollars, and additional contracts to be let soon, will make it possible by 1945 to serve 18,750 additional acres in this highly-productive area.

On the recommendation of Commissioner Harry W. Bashore, the secretary said that he had awarded to Macri Company of Seattle, Wash., a contract in the sum of $128,550.95.

Because the shortage of materials, men and equipment has brought new highway construction and major improvements almost to a standstill, there are now no detours on the North Carolina state highway system—for the first time since the State Highway and Public Works Commission was formed over 22 years ago. In calling attention to this fact, James S. Burch, of Raleigh, statistics and planning engineer for the commission, says that the only construction work now in progress involves access roads to military bases and that "the entire limited forces of the commission are concentrating upon the enormous task of maintenance, to hold the roads in the best possible condition; and in preparation of detailed road project construction plans for postwar.

Construction on the federal housing project of 2,681 temporary dwellings at Dallas, Tex., is moving forward again after the regional WPB persuaded the War Department to authorize the Central Procurement Agency to buy lumber for the contractors from mills the Army had booked ahead. The four contractors on the project had not been able to obtain lumber but have now been able to place orders for approximately 6,500,000 of the required 10,000,000 board feet. Half-inch plywood is being used for flooring by authorization of the Federal Public Housing Authority in order to ease the pressure on lumber mills.

Construction of a new four-lane bridge across the Mississippi River at Memphis, Tenn., is "in sight," E. H. Crump, chairman of the Memphis and Arkansas Bridge Commission said Jan. 4. He made his statement following an all-day meeting attended by William H. MacDonald, federal administrator of public roads; Governor Prentice Cooper of Tennessee, Congressman Davis, and city officials.

Crump said, "we are going to have a bridge, and as soon as Mr. Mac Donald returns to Washington he plans to send us some resolutions which he thinks necessary to adopt."

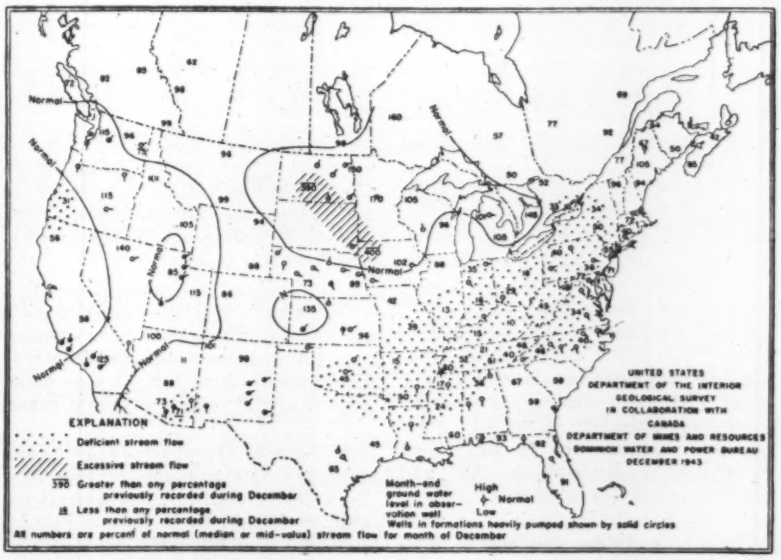
Crump added that a meeting of the bridge commission, including the eight Arkansas members, would be called as soon as the data are received.

December weather unfavorable for streams and groundwater

Weather during December was extremely unfavorable for maintenance of stream flow and groundwater levels. A year ago stream flow was above normal in 80 percent of the United States and Canada. During December 1943 the situation was reversed and stream flow was below normal in 80 percent of the area. Groundwater also followed this broad changing pattern. In general there was an expansion of the area of subnormal stream flow to include California (except southern), parts of Oregon and Washington, Pennsylvania, New York, New England, Ontario (except western), Quebec, and Maritime Provinces, in addition to the extensive area from Oklahoma eastward where a stream-flow drought has been prevalent.

Storage for power exceeds that of one year ago only in New England and in the Maritime Provinces. In the South-central and southern Plains, and Texas storage is roughly only 60 percent of a year ago. In Montana, Washington, and California storage for power more nearly approaches the amount available a year and averages about 85 percent of the preceding year.

The accompanying map furnishes information by which water users may make inferences concerning prospective flow in the immediate future, since there is better than an even chance that the stream flow will continue subnormal in indicated areas of deficient stream flow and better than even chance that stream flow will continue above normal in areas of excessive stream flow. In making these interpretations due consideration must be given to temperature as it affects the accumulation or melting of snow.


Normal
EXPLANATION
Deficient stream flow
Excessive stream flow
590 Greater than any percentage previously recorded during December
18 Less than any percentage previously recorded during December
Month-end ground water level in observation well
High
Normal
Low
Wells in formations heavily pumped shown by solid circles
All numbers are percent of normal (median or mid-value) stream flow for month of December
UNITED STATES DEPARTMENT OF THE INTERIOR GEOLOGICAL SURVEY IN COLLABORATION WITH CANADA DEPARTMENT OF MINES AND RESOURCES DOMINION WATER AND POWER BUREAU DECEMBER 1943

MEN AND JOBS

Brig. Gen. David A. D. Ogden recently departed for overseas, a fact which became known when his wife, Pauline W. Ogden, enlisted as an Air-Wac and was assigned to Fort Des Moines, Iowa, for basic training. Gen. Ogden, then a major, was chief of construction on Fort Peck Dam, and later district engineer at Trinidad, in charge of base construction in the Caribbean. Most recently he has been commanding general of Amphibian Engineer training, first at Camp Edwards in Massachusetts and then at Carrabelle, Fla.

Henry R. Emory, executive director of the Wilmington, N. C., Housing Authority, has been appointed chairman of the City Planning Board recently set up. **A. C. Nichols,** city manager, is vice chairman.

The appointment of **John Henry Kreitler** to the position of engineering associate in the Berkeley, Calif., Public Works Department was announced recently. Kreitler will fill a vacancy left when **Charles H. Thomas** retired.

Clifford E. Plummer, chief electrical engineer of the Modesto, Calif., irrigation district since Jan., 1936, has been appointed chief engineer of the district. Plummer was named as the directors of the district voted to consolidate the offices of the irrigation engineer and the chief electrical engineer. The post of irrigation engineer was left vacant by the recent resignation of **Neil M. Cecil.** Plummer, before joining the Modesto Irrigation District in 1936, had been with the Turlock Irrigation District Engineer's office for 13 years.

Carl W. Smedburg, of Greensboro, N. C., who served as city manager of Greensboro from Dec. 1, 1937, until his resignation June 15, 1943, has accepted a position as principal engineer in the water division of the Office of War Utilities, War Production Board, and has reported at Washington, D. C. Until his recent resignation he had been connected with Greensboro since 1924, when he was in charge of the construction of the city's water filtration plant. He later was named engineer in charge of all city water plants, and then became superintendent of the city water and sewer departments. He was named director of public works in 1930, and city manager seven years later.

Russell A. Pride, graduate of Iowa State College, 1929, formerly associate engineer, Engineer Field Maintenance Offices of the U. S. Army, at Columbus, Ohio, has entered the Navy as a lieutenant, junior grade.

W. Causey Cox, of Asheboro, N. C., has been appointed special surveyor for Randolph County to establish boundaries of property on the Randolph-Guilford County, N. C., line.

J. Ray Heath has resigned as King County road engineer at Seattle, Wash., to establish a general engineering firm in that city with George Hammond. Named to succeed him is **A. S. Leeper,** formerly supervising engineer for the county.

Maj. James F. Key, 62, post engineer of the Moses Lake Army Airbase in Eastern Washington, and one of its builders, retired from the army this month. He reentered the service in May, 1941, and subsequently served at the Umatilla, Ore., ordnance depot and as post engineer at the twin bases of Fort Canby and Fort Columbia at the mouth of the Columbia river, and at the Ephrata, Wash., airbase.

Lt. George M. Green, Jr., of Vicksburg, Miss., has been assigned to Camp Butner, N. C., as assistant post engineer. Lt. Green received his degree in civil engineering from the University of Mississippi and has been on active duty with the Army since April, 1942.

John W. Pritchett, of Austin, Tex., who has been a member of the Texas state board of water engineers since March, 1936, has been reappointed as a member of the board for another six-year term by Governor Coke R. Stevenson.

James I. Stober, Allison, Ia., has resigned as Butler County engineer to accept a position with the sanitary engineering department of the state board of health at Des Moines.

William D. Weidlein, consulting engineer at St. Paul, Minn., has signed a contract with the Omaha Chamber of Commerce to serve for one year as an adviser to the postwar planning board.

Richard E. Dougherty, a civil engineer and vice president of the New York Central Railroad, has been elected a director of the Great Eastern Fire Insurance Co. of White Plains, N. Y.

A. N. Languis, director of the Michigan State Building Division, has been appointed by Governor Kelly to take charge of the State Planning Commission until appointment of a new director to succeed the late R. V. Gay, who died Dec. 16.

Frederick G. Healy, assistant state highway engineer in New Mexico, has been named acting state highway engineer to succeed **Frank M. Limbaugh** of Albuquerque, who resigned. Mr. Healy has been associated intermittently with the New Mexico state highway department since 1921.

W. Stewart Rogers, Asheville, N. C. architect and member of Six Associates, has just been commissioned a lieutenant in the U. S. Naval Reserve and has reported to the Naval Air Training Station at Quonset Point, R. I.

Bernard Touhey, Arizona state engineer, has reorganized the staff of the highway department to prepare for a postwar high-building program. **R. C. Perkins,** a district engineer for many years, was made assistant state engineer in charge of field work. The five district engineers are: **W. R. Hutchins,** Apache, Gila and Navajo counties; **James A. Parker,** Maricopa and Yuma counties; **George Lang,** Pima, Pinal and Santa Cruz counties; **Roy Holland,** Graham, Cochise and Greenlee counties, and **Ed Mays,** Coconino, Mohave and Yavapai counties.

Col. Miles Reber, division engineer of the Missouri River division, U. S. Engineers, Omaha, Neb., has been transferred to Washington, D. C., and has been succeeded by **Brig. Gen. Roscoe C. Crawford,** who, since June 1940, has been the commandant of the engineering school at Fort Belvoir, Va.

R. V. Terrill resigned as city engineer of Coldwater, Mich., to accept an appointment under the Federal Public Housing Authority as superintendent of streets and grounds at the Willow Run Housing Area.

Robert H. Emmerson, assistant engineer, has been appointed engineer of right-of-way, Atlantic region, Canadian National R. R., with headquarters at Moncton, N. B.

Manuel Santos, chief engineer for the building construction firm of Iglehart, Caldwell & Scott, Inc., has been transferred from a project at the U. S. Military Academy, West Point, N. Y., to Green Haven, N. Y., where the firm has been awarded a building contract by the U. S. Army Engineers.

Col. Burton appointed N.Y. division engineer

Col. Albert H. Burton, since last May ...strict Engineer of the Philadelphia Engineer District, has been appointed Division Engineer of the important North Atlantic Division at New York, effective Jan. 10, 1944. He succeeds Brig. Gen. B. C. ...nn, whose new assignment is not ...announced.

A graduate of West Point in the class ...1925, Col. Burton has had a wide ex...rience in the Corps of Engineers, ...h with troops and on construction. ...e of his early assignments was a two-...r tour of duty in Alaska, following ...ich for four years he taught military ...nce and tactics at Carnegie Insti...e of Technology. Three more years ...Pittsburgh were spent as assistant to ... District Engineer there. From 1940 ...il he went to Philadelphia he was in ... Office of the Chief of Engineers, ...t in the rivers and harbors section ... then in the construction division.

...n a statement made upon reporting ... duty at New York, Col. Burton re...led the important role this Division ...e had played in our early war prep...tions, not only supervising all con...uction work in the states of New ...k, New Jersey and Delaware, but ...dling the contracts that were let for ... Greenland and Caribbean bases and ... the Middle East work in Eritrea ... Iran. Work of the Division now, ... Col. Burton, involves procurement ...ifteen million dollars' worth of Engi... military supplies a month, the su...vision of all Engineer depots in the ..., and the placing of such additional ...struction contracts as war develop...ts require.

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...l. E. Wessman president ...f Consulting Engineers

...t the annual meeting of the Govern... Council of the American Institute of ...sulting Engineers, Jan. 18, Prof. ...old E. Wessman, chairman, Depart...t of Civil Engineering, New York ...versity, was elected president to suc... R. E. Bakenhus. Irving V. A. Huie, ...missioner of Public Works, New ... City, was elected vice president. ...t the annual meeting of the Institute, ... Jan. 17, the election of three new ...bers of the governing council was ...unced. These are E. Rowland Hill, ...ident, Gibbs & Hill, Inc., Lt. Col. ...h R. Needles, and Col. Carlton S. ...tor, all of New York.

JOBS OF THE WEEK

APARTMENTS, San Pedro, Calif.
Murphy Brothers, Beverly Hills, are constructing 17 apartments by their own forces. The estimated cost is $910,000. Hugh Gibbs, Long Beach, is the architect.

HIGHWAY, Mexico
Mexican Government, Maximino Camacho, Secretary of Communications, Mexico City, will construct a highway between Mexico City and Tampico, via Vera Cruz by its own forces. The estimated cost is $4,000,000.

PLANT BUILDING, Barberton, Ohio
Seiberling Rubber Co., Barberton, awarded a contract for a plant building to National Concrete Fireproofing Co., Cleveland, Ohio. The estimated cost is $750,000. Albert Kahn Associated Architects & Engineers, Inc., Detroit, Mich., are the engineers and architects.

HOUSING, Detroit, Mich.
W. E. Wood Co., Detroit, Mich., has been awarded a contract for a housing project, including 280 temporary dwelling units, by Public Housing Authority, Cleveland, Ohio, at $851,750. Malcomson-Calder & Hammond, Inc., Detroit, Mich., are the architects.

HOUSING, Vallejo, Calif.
Public Housing Authority, Vallejo, awarded a contract for 1,000 unit family dwelling and community building to Robert McCarthy Co., San Francisco, $1,777,956. David H. Horn, Berkeley, is the architect.

ADDITIONAL FACILITIES FOR WATERFRONT EXPANSION, Norfolk, Va.
Bureau of Yards & Docks, Navy Department, Washington, D. C., has given a contract for additional facilities for waterfront construction, at Naval Operating Base to the McLean Contracting Co., Baltimore, Md. The cost figure is reported at $1,178,000.

QUARTERS, HEATING PLANT, etc., Patuxent River, Md.
Bureau of Yards & Docks, Navy Department, Washington, D. C., awarded a contract for the construction of married personnel quarters, services and heating plant at Naval Air Station to John A. Johnson Contracting Co., Brooklyn, N. Y., at $1,398,000. Edmunds & White, Baltimore, Md., are the architects. Whitman, Requardt & Smith, Baltimore, are the engineers.

DWELLINGS, New Orleans, La.
Deslonde Realty Co., New Orleans, La., awarded a contract for the construction of 77 duplex houses to Schill-Wolfson, Inc., New Orleans, La. The estimated cost is $630,000.

HOUSING and FACILITIES, Terminal Island, Calif.
James I. Barnes Construction Co., Santa Monica, has been awarded a contract by the Bureau of Yards & Docks, Navy Department, Washington, D. C., for additional housing and facilities, Receiving Station, at Naval Operating Base, at a cost of $2,262,000.

APARTMENT BUILDINGS, Baltimore, Md.
Carver Housing Corp., Baltimore, Md., is constructing Cherry Woods Housing Project, including 21 apartment buildings by its own forces. The estimated cost is $1,000,000.

HOUSING, Baltimore, Md.
Public Housing Authority, Washington, D. C., awarded a contract for constructing 400 dwellings and a community building to Tovell Construction Co., Baltimore, Md., at $1,123,000. Hilyard R. Robinson, Washington, D. C., is the architect.

WOOD BARRACKS, Alaska
U. S. Engineers, Portland, Ore., awarded a contract for the construction of 2,000 wood barracks for hospital units to Morrison-Knudsen Co., Boise, Ida., at $1,000,000.

WOOD BARRACKS, Outside the United States.
U. S. Engineers, Portland, Ore., awarded a contract for 800 units for pre-cut barracks for hospital units to Keith-Brown Building Supply Co., Salem Co., at $1,323,264; 700 units to Prefabrication Engineering Co., Portland, Ore., at $1,311,100, and 300 other units to Timber Structures Co., Portland, Ore., at $562,800.

Note—Additional bidding and contract news on many projects large and small appear in the Construction News section beginning on page 85.

OBITUARY

John R. Holmes, 57, of Moline, Ill., died recently. He had been active in construction work and was superintendent on the following major projects: Union Depot, St. Paul, Minn.; New Jersey approach to the George Washington Bridge; elevation of the Long Island railroad at Jamaica and Hollis; Linden Blvd. grade elimination, Canarsie, N. Y.; Kingsburg, Ind., Ordnance plant; St. Helena naval base, Norfolk, Va., and the Republic aircraft plant, Farmingdale, N. Y.

John Thomas Young, 85, a retired civil engineer and surveyor, died Jan. 9 in Kansas City, Mo. Twenty-five years ago he retired from the engineering department of Kansas City.

Frank H. Eastman, 62, engineer and contractor, died at Harrisburg, Pa., Jan. 7. Vice president and general manager of the engineering firm of Gannett, Eastman & Fleming, Inc., Mr. Eastman had done construction work in many parts of the United States, in England, South America and Canada. Previous to his connection with Gannett, Eastman & Fleming, Inc., he worked on the Hudson River tubes and then with the Vang Construction Co.; Frazer, Brace and Co. and the Ambursen Co.

Franklin G. Laudeman, 78, general manager of the Calvert Building and Construction Co., Baltimore, Md., for forty-seven years, died Jan. 5. Mr. Laudeman, retired six years ago.

George W. Botham, 78, chairman of the board of the Wisconsin Foundry & Machine Co., Madison, Wis., died Dec. 27. He was a specialist on water supply systems for many Wisconsin towns.

Hugh R. Carter, 56, former Arkansas highway engineer, died Jan. 9. A native of Winfield, Kans., he had been a resident of Little Rock 40 years.

George A. Dorfman, 52, secretary of the Brooklyn, N. Y., Engineers' Club, died Dec. 17. His earlier engineering affiliations were with Cooper and Evans on the Jerome Avenue subway project and later with the J. C. Million Co. on a Brooklyn subway. Later he had supervision of large demolition projects (1,500 buildings) and this was followed by his work on the reconstruction of the Floyd Bennett air field primarily on the buildings and highway features. More recently he had been an engineer for the U. S. Army Air Forces.

Arthur L. B. Schmidt, 63, chief engineer of the city water department, Youngstown, Ohio, died Dec. 27. He was assistant engineer for the State Highway Department in Mahoning county before joining the department.

J. O'Neal Craig, 59, Rock Hill, S. C., died Jan. 5. He specialized in waterworks construction and for 12 years was superintendent of waterworks in Salisbury, N. C.

Harold B. Wright, who while serving with the U. S. Engineers helped construct Lock 22 at Ravenwood, W. Va., and Lock 27 at Proctorville, Ohio, died Jan. 4. He was safety director for the Huntington, W. Va., district engineers office.

K. I. Sawyer, pioneer road engineer, died Jan. 8 in Marquette, Mich. He had been engineer for the Marquette County Road Commission for the past 26 years.

Joseph P. Wadhams, 66, engineer, who developed plans for the electrification of the New York division of the New Haven Railroad system, died at New Haven, Conn., Jan. 17. He was connected with the Connecticut Public Utilities Commission. A graduate of Sheffield Scientific School of Yale University in 1899, he was an expert on the valuation of water companies.

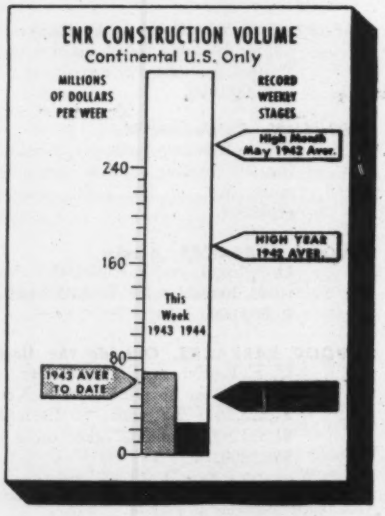
Mr. Wadhams, a consulting engineer in Torrington, was a past president of the Connecticut Society of Civil Engineers.

CONTRACTS AND CAPITAL

CIVIL ENGINEERING construction volume in continental U. S. totals $25,500,000 for the week. This volume, not including the construction by military engineers abroad, American contracts outside the country, and shipbuilding, is 74 percent lower than a week ago, and 62 percent below the total for the corresponding 1943 week.

Private construction is up 30 percent compared with a year ago, but declines 12 percent from a week ago. Public construction is 67 and 78 percent lower, respectively, than last year and last week.

The current week's volume brings 1944 construction to $145,777,000 for the three-week period, a decrease of 21 percent from the $184,971,000 for the corresponding 1943 period. Private construction, $16,870,000, is 47 percent higher than last year, but public construction, $128,907,000, is down 26 percent as a result of the 61 percent decrease in state and municipal work, and the 23 percent decline in federal.



In the classified construction groups, gains over last yeek are in sewerage, industrial buildings, and earthwork and drainage. Increases over the 1943 week are in sewerage, bridges, industrial and commercial buildings, and earthwork and drainage.

New capital for construction purposes for the week totals $10,175,000, a gain of 326 percent over a year ago. The current week's new financing is made up of $4,300,000 in corporate security issues, $1,900,000 in RFC loans for private industrial construction, and $3,975,000 in state and municipal bond sales.

New construction financing for 1944 to date, $143,796,000, compares with $3,066,000 for the opening three-week 1943 period.

CONTRACTS
Continental U. S. Only
(Thousand of Dollars)

	Week Ending Jan. 21 1943	Jan. 13 1944	Jan. 20 1944
Federal	$61,007	$92,570	$19,[illegible]
State & Municipal	3,426	965	1,[illegible]
Total public	$64,433	$93,535	$20,[illegible]
Total private	3,497	5,145	4,[illegible]
TOTAL	$67,930	$98,680	$25,[illegible]
Cumulative 1944 (3 weeks)			$145,[illegible]
Cumulative 1943 (3 weeks)			$184,[illegible]

Note: Minimum size projects included are: Waterworks and waterways projects, $15,000; other public works, $25,000; industrial buildings, $40,000; other buildings, $150,000.

NEW PRODUCTIVE CAPITAL

	1943 3 weeks	Cumulative 1944 3 weeks
NON-FEDERAL	$3,066	$32[illegible]
Corp. Securities	....	4[illegible]
State & Mun.	1,566	4[illegible]
RFC Loans	1,500	1,[illegible]
FEDERAL	....	$90[illegible]
TOTAL CAPITAL	$3,066	$143,[illegible]

ENR INDEX NUMBERS

Index base=100		1913	1944
Construction Cost	Jan. '44	294.57	141[illegible]
Building Cost	Jan. '44	231.55	125[illegible]
Volume	Dec. '43	103.	4[illegible]